ABSTRACT

An apparatus distributing multicast messages with a multicast address among the ports of a network device on the basis of, inter alia, virtual local area network (VLAN) associations among the ports. One or more VLANs within the network device are assigned to the multicast address. The apparatus comprises a lookup engine, a forwarding engine coupled to the lookup engine, and a plurality of translation engines. The lookup engine needs to map the multicast address to a unique index value assigned to the multicast address and a bit string representing the group of multicast destination ports only once. The forwarding engine distributes the multicast messages and the unique index value to the group of multicast destination ports of the network device in accordance with the bit string. The translation engines are associated with each port of the network device respectively. Each translation engine independently performs a VLAN identifier (VID) translation in parallel on each port of the network device from the unique index value, the destination port and a VID-select index.